

Synthesis and Analysis of Organic Compounds

Course meetings: MWF 9:30–10:20 am Bilger 341C

Instructor: P. Williams philipwi@hawaii.edu
Bilger 245A 808-956-5720

Office hours by appointment

Course Objective: The objective of Chemistry 445 is for students to develop a broader understanding of modern synthetic organic chemistry. In particular, lectures will focus on the underlying theory governing stereoselective synthesis, and on the chemical characterization of organic compounds in order to deduce planar structure (2D & MS) and stereochemistry. Examples will include the application of these instrumental techniques to biological macromolecules.

Prerequisites: Chem 273 and Chem 273L; C not C- or better in both; Declared Chemistry or Biochemistry Major

Exams

Exam #1	Friday, February 15 th
Exam #2	Wednesday, March 27 th
Final Exam	Friday, May 10 th @ 9:45-11:45 am.

Grading: Each midterm exam (two total) will be worth 100 points and the final exam will be worth 200 points for a total of 400 points. **Participation will count for 45 points.** Final grades will be determined from the average of the raw scores. The following **tentative** scale will be used:
A+ 90-100; A 85-89; A- 80-84; B+ 75-79; B 70-74; B- 65-69; C+ 60-64; C 55-59; C- 50-54; D+ 45-49; D 40-44; D- 30-39; F 29-0.

Code of Conduct: Academic honesty policies can be found at the following website: <http://www.studentaffairs.manoa.hawaii.edu/policies/>. Students are expected to familiarize themselves with these rules. **Any student caught violating the policies on plagiarism or cheating will receive a grade of an "F" in the course.**

Disabilities: The University of Hawaii is an equal opportunity/affirmative action institution, dedicated to teaching all students and reaching all learners. It is our commitment to make our lectures and classrooms accessible to all students. If you have, or think you might have, a disability and have not voluntarily disclosed its nature and the support you need, you are invited to contact the UH KOKUA Program (<http://www.hawaii.edu/kokua/> or (808) 956-7511), or talk with the instructor in order to get any accommodation you might need to take the course. This information will be kept confidential. Please do this as early in the course as possible.

Student Learning Outcomes:

1. To understand the consequences (reactivity, properties) of the three-dimensionality of molecules,
2. To be able to interpret patterns of reactivity on the basis of mechanistic reasoning,
3. To be able to deduce molecular structures from 2D NMR spectroscopic data,
4. To understand the design of instrumentation commonly used in a organic chemistry lab, e.g. NMR, MS, GC, HPLC, and how these design factors impact the resulting data.